**Integrated Aviation Systems Program**

# X-57 Sub-Project

Completed Technology Project (2015 - 2021)

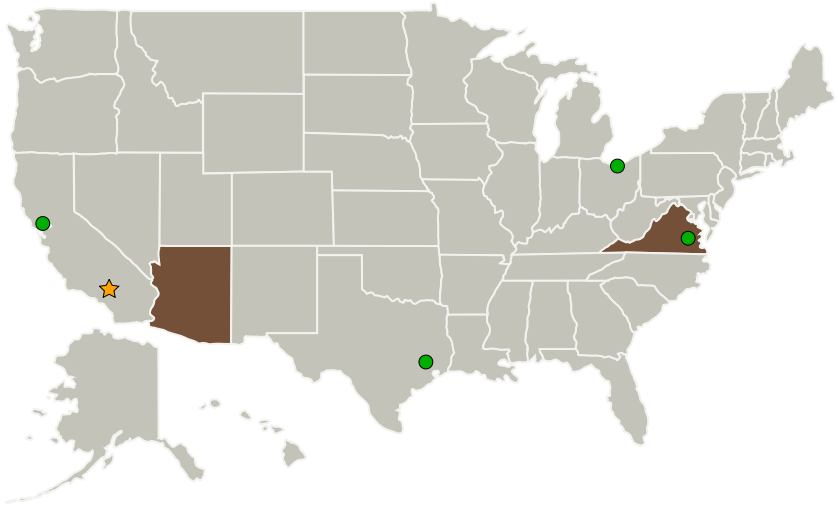
## Project Introduction

NASA's Electric Propulsion research is being demonstrated in the X-57 Sub-Project under the Flight Demonstrations and Capabilities Project. The X-57 Sub-Project will develop, test, and integrate Distributed Electric Propulsion technologies and a novel high aspect ratio wing into a Tecnam 2006T aircraft. The X-57 Sub-Project will demonstrate and document successful methodologies for integrating an electric propulsion system into an airframe as well as demonstrate the benefits of electric propulsion in flight.

## Anticipated Benefits

Developing a Distributed Electric Propulsion (DEP) system and successfully integrating it into an airframe is a significant challenge. NASA will document the development and integration of a DEP system into an airframe and share lessons learned and methodologies with industry to assist them with the development of future electrified aircraft concepts. X-57 team members are also actively participating in ASTM and FAA standards definition that will be crucial to producing future electrified aircraft. In addition, flight testing of the X-57 aircraft will provide data on the real benefits of electric propulsion in cruise flight.

## Primary U.S. Work Locations and Key Partners

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| Organizations Performing Work | Role | Type | Location |
|---|---|---|---|
| ★Armstrong Flight Research Center(AFRC) | Lead Organization | NASA Center | Edwards, California |
| ●Ames Research Center(ARC) | Supporting Organization | NASA Center | Moffett Field, California |
| Electric Power Systems | Supporting Organization | Industry Small Disadvantaged Business (SDB) | Chandler, Arizona |
| Empirical Systems Aerospace, Inc. (ESAero) | Supporting Organization | Industry | Pismo Beach, California |
| ●Glenn Research Center(GRC) | Supporting Organization | NASA Center | Cleveland, Ohio |
| Joby Aviation | Supporting Organization | Industry | |
| ●Johnson Space Center(JSC) | Supporting Organization | NASA Center | Houston, Texas |
| ●Langley Research Center(LaRC) | Supporting Organization | NASA Center | Hampton, Virginia |
| Scaled Composites | Supporting Organization | Industry | |
| TMC Technologies of WV Corporation | Supporting Organization | Industry Historically Underutilized Business Zones (HUBZones) | Fairmont, West Virginia |

## Organizational Responsibility

**Responsible Mission Directorate:**

Aeronautics Research Mission Directorate (ARMD)

**Lead Center / Facility:**

Armstrong Flight Research Center (AFRC)

**Responsible Program:**

Integrated Aviation Systems Program

## Project Management

**Program Director:**

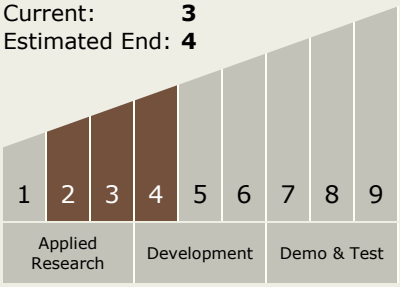
Richard L Noble

**Project Managers:**

Brent R Cobleigh
Thomas K Rigney

## Technology Maturity (TRL)

Start: **2**
Current: **3**
Estimated End: **4**



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| Organizations Performing Work | Role | Type | Location |
|---|---|---|---|
| Xperimental | Supporting Organization | Industry | |

| Primary U.S. Work Locations | |
|---|---|
| Arizona | Virginia |

## Project Website:

https://www.nasa.gov/aeroresearch/programs/iasp/fdc

## Technology Areas

**Primary:**

- TX01 Propulsion Systems
  - TX01.3 Aero Propulsion
    - TX01.3.8 All Electric Propulsion

## Target Destination

Earth